

## **ABSTRACT OF THE DISCLOSURE**

Disclosed is an inductively coupled plasma processing apparatus which has a very-high-frequency parallel antenna producing inductively-coupled plasma for a large substrate.

This plasma processing apparatus includes a very high frequency power source in order to

5 generate the high dense plasma, and parallel-connected antenna units that receive the very

high frequency power from the very high frequency source. The very high frequency power

has a frequency of 20 MHz to 300 MHz. According to present invention, while the plasma

density can be raised, the electron temperature can be lowered. Thus, when the dry etch

process is conducted using  $CF_x$ , the  $CF_x/F$  ratio can be adjusted to have the low density of

10 fluorine radical. And also, it is possible to have the high radical density of  $CF_2$ ,  $CF_3$  and the

like. As a result, the proper radical ratio, which is relative to increase selection ratio, enhances

the dry etch process excellently.